CATALOG DOCUMENTATION
EMAP SURFACE WATERS PROGRAM LEVEL DATABASE
1991-1994 NORTHEAST LAKES DATA
LAKE DESIGN DATA

TABLE OF CONTENTS

1. DATA SET IDENTIFICATION

1.1 Title of Catalog Document
EMAP Surface Waters Lake Database
1991-1994 Northeast Lakes
Lake Design Data

1.2 Authors of the Catalog Entry
U.S. EPA NHEERL Western Ecology Division
Corvallis, OR

1.3 Catalog Revision Date
June 1997

1.4 Data Set Name
LDESIGN

1.5 Task Group
Surface Waters

1.6 Data Set Identification Code
116

1.7 Version
001

1.8 Requested Acknowledgment
These data were produced as part of the U.S. EPA's Environmental Monitoring and Assessment Program (EMAP). If you publish these data or use them for analyses in publications, EPA requires a standard statement for work it has supported:

"Although the data described in this article have been funded wholly or in part by the U.S. Environmental Protection Agency through its EMAP Surface Waters Program, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement of the conclusions should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigator

Dr. John Stoddard
U.S. Environmental Protection Agency
NHEERL Western Ecology Division
200 S.W. 35th Street
Corvallis, OR 97333

2.2 Investigation Participant - Sample Collection

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The primary function of the lake design data are to provide the ability for researchers to calculate population estimates using data collected under the EMAP probability-based statistical survey design.

3.2 Keywords for the Data Set

weighting factors, probability design, statistical analysis, regional estimates.

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The Environmental Monitoring and Assessment Program (EMAP) was designed to periodically estimate the status and trends of the Nation's ecological resources on a regional basis. EMAP provides a strategy to identify and bound the extent, magnitude and location of environmental degradation and improvement on a regional scale based on a probability-based statistical survey design.

4.2 Data Set Objective

This data set is part of a demonstration project to evaluate approaches to monitoring lakes in EMAP. The data set contains the statistical weighting factors which allow the data to be summarized into statements about the status of Lakes in the Northeast region.

4.3 Data Set Background Discussion

Data on the lakes for site selection were summarized from digital and paper sources. Lakes were classified as target or non-target; target lakes were categorized by lake surface area into six classes. Sample weights for each sampled lake were determined using the sample sizes for each size class and total surface area in each size class. Lakes were chosen randomly, using a clustering algorithm which spread the sample spatially across the region. Information on each sampled lake was collected using information taken from maps, digital sources, and visits to the site.

4.4 Summary of Data Set Parameters

Information on each lake sampled, such as the lake name, geographic location, size class, county and state are stored in this data set. The weighting factors for each lake are also stored in this data set. There are separate weighting factors for fish (fish assemblage and fish tissue), and for the other indicator types (chemistry, birds, benthos, etc.). The weighting factors are to be used when computing regional estimates for the entire data set over the four year period. Further details on the methods which should be used when processing these data can be obtained from the Information Management contact, below.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

To allow scientists to summarize indicator data for the defined population of lakes in the Northeast region during a two month sampling window from July through mid-September.

5.1.2 Sample Collection Methods Summary

Not Applicable

5.1.3 Sampling Start Date

July 1991

5.1.4 Sampling End Date

September 1994

5.1.5 Platform

NA

5.1.6 Sampling Gear

NA

5.1.7 Manufacturer of Instruments

NA

5.1.8 Key Variables

NA

5.1.9 Sampling Method Calibration

NA

5.1.10 Sample Collection Quality Control
See Baker et al. (1997).

5.1.11 Sample Collection Method Reference

Baker, J.R., G.D. Merritt, and D.W. Sutton (eds.). 1997. Environmental Monitoring and Assessment Program - Surface Waters: Field Operations Manual for Lakes.

Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program - Surface Waters: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group.

5.1.12 Sample Collection Method Deviations
NA

5.2 Data Preparation and Sample Processing

5.2.1 Sample Processing Objective
See Baker et al. (1997) and Chaloud and Peck (1994).

5.2.2 Sample Processing Methods Summary
See Baker et al. (1997) and Chaloud and Peck (1994).

5.2.3 Sample Processing Method Calibration
See Baker et al. (1997) and Chaloud and Peck (1994).

5.2.4 Sample Processing Quality Control
See Baker et al. (1997) and Chaloud and Peck (1994).

5.2.5 Sample Processing Method Reference
See Baker et al. (1997) and Chaloud and Peck (1994).

6. DATA MANIPULATIONS

6.1 Name of New or Modified Values
None.

6.2 Data Manipulation Description
See Chaloud and Peck (1994).

7. DATA DESCRIPTION

7.1 Description of Parameters

Parameter Name	Data Type	Len	Format	Parameter Label
COUNTY	Char	40		Lake County Location
ECO_ATH	Char	15		Broad Ecoregion Location
ELEV	Num	8		Lake Elevation from 7.5 Map (feet)
GRID_TYP	Char	1		G=1X Grid,A=3X Augment (TIME),F=IES Fish
HEXSW_ID	Char	12		EMAP hexagon identifier
LAKEAREA	Num	8		Lake Area from Las Vegas GIS (ha)
LAKENAME	Char	30		Lake Name
LAKE_ID	Char	6		Lake Identification Code
LAT_DD	Num	8		Lake Latitude (decimal degrees)
LON_DD	Num	8		Lake Longitude (-decimal degrees)
MAP_100	Char	20		Lake 1:100,000 USGS Map Name
MAP_75	Char	25		7.5 Minute USGS Map Name
REG_3X	Char	6		Name of TIME Augment Region
REPEAT91	Char	1		Repeat Sample on Lake - Y/N
REPEAT92	Char	10		Repeat Visit Status (Plan)
REPEAT93	Char	1		2X2 Index/Annual 1993 Repeat Lake (Y/N)
REPEAT94	Char	1		2x2 Index/Annual 1994 Repeat Lake (Y/N)
SITECLS	Char	10		Lake Sample Class
SIZE_CLS	Char	8		Tier 2 Lake Area Size Class (ha)
STATE	Char	2		State Location
TIME_REG	Char	8		TIME Study Region Location
TIME_REP	Char	1		Annual Time Repeat Lake (Y/N)
WGT_1X	Num	8		1x Weight (# lakes) for 1991-1994
WGT_3X	Num	8		3x Weight (# lakes) for 1991-1994
WGT_FS	Num	8		Fish Sample Wgt (# lakes) for 1991-1994
YEAR	Num	8		Year Sampled
YEARORIG	Char	4		Sample Year for Lake Selection

7.1.1 Precision to which values are reported

Total abundance is reported as a whole number.
Mean abundance and standard deviation (SD) are reported to 2 decimal places.

7.1.2 Minimum Value in Data Set

Name	Min
ELEV	22
LAKEAREA	1
LAT_DD	39.0683
LON_DD	-79.42944
WGT_1X	0
WGT_3X	0
WGT_FS	313.6
YEAR	1991

7.1.3 Maximum Value in Data Set

Name	Max
ELEV	2190
LAKEAREA	34014.84
LAT_DD	47.2125
LON_DD	-67.30111
WGT_1X	200
WGT_3X	200
WGT_FS	2508.8
YEAR	1994

7.2 Data Record Example

7.2.1 Column Names for Example Records

```
COUNTY,ECO_ATH,ELEV,GRID_TYP,HEXSW_ID,LAKEAREA,LAKENAME,LAKE_ID,LAT_DD,LON_DD,
MAP_100,MAP_75,REG_3X,REPEAT91,REPEAT92,REPEAT93,REPEAT94,SITECLS,SIZE_CLS,
STATE,TIME_REG,TIME_REP,WGT_1X,WGT_3X,WGT_FS,YEAR,YEARORIG
```

7.2.2 Example Data Records

```
" "," ",.,"G","1310120",1,"MRS. POUND'S POND","CT001L",41.45667,-73.20028," ",
" "," ","N"," "," "," ","NON-TARGET","A:1-5","CT","NEWENG"," ",128,128,.,1991,
"1991"

" "," ",.,"G","1032230",19.5,"BISSONETTE POND","CT002L",41.92417,-72.21889," ",
" "," ","Y"," "," "," ","TARGET","B:5-20","CT","NEWENG"," ",64,64,.,1991,
"1991"

" "," ",.,"G","1032230",1.6,"NO NAME","CT003L",41.87639,-72.20278," "," ",
" ","N"," "," "," ","NON-LAKE","A:1-5","CT","NEWENG"," ",128,128,.,1991,
"1991"
```

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude
-79 Degrees 25 Minutes 45.98 Seconds West (-79.42944 Decimal Degrees)

8.2 Maximum Longitude
-67 Degrees 18 Minutes 3.96 Seconds West (-67.30111 Decimal Degrees)

8.3 Minimum Latitude
39 Degrees 4 Minutes 5.88 Seconds North (39.0683 Decimal Degrees)

8.4 Maximum Latitude
47 Degrees 12 Minutes 45.00 Seconds North (47.2125 Decimal Degrees)

8.5 Name of Area or Region
Northeast: EPA Regions I and II which includes Connecticut, Massachusetts, Maine, New Hampshire, New Jersey, New York, Vermont, Rhode Island

9. QUALITY CONTROL / QUALITY ASSURANCE

9.1 Data Quality Objectives
See Chaloud and Peck (1994)

9.2 Quality Assurance Procedures
See Chaloud and Peck (1994)

9.3 Unassessed Errors
NA

10. DATA ACCESS

10.1 Data Access Procedures

10.2 Data Access Restrictions

10.3 Data Access Contact Persons

10.4 Data Set Format

10.5 Information Concerning Anonymous FTP

10.6 Information Concerning Gopher and WWW

10.7 EMAP CD-ROM Containing the Data

11. REFERENCES

Baker, J.R., G.D. Merritt, and D.W. Sutton (eds.). 1997. Environmental Monitoring and Assessment Program - Surface Waters: Field Operations Manual for Lakes. EPA/620/R-97/001. U.S. Environmental Protection Agency. Office of Research and Development. Washington, D.C.

Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program - Surface Waters: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group. U.S. Environmental Protection Agency. Office of Research and Development.

Diaz-Ramos, S., D.L. Stevens, Jr., and A.R. Olsen. 1996. EMAP Statistical Methods Manual. U.S. Environmental Protection Agency. Office of Research and Development. EPA/620/R-96/002.

12. TABLE OF ACRONYMS

13. PERSONNEL INFORMATION

Project Manager
Dr. John Stoddard
U.S. Environmental Protection Agency
NHEERL Western Ecology Division
200 S.W. 35th Street
Corvallis, OR 97333
541-754-4441
541-754-4716(FAX)
stoddard@mail.cor.epa.gov

Quality Assurance Officer
Dave Peck
U.S. Environmental Protection Agency
NHEERL Western Ecology Division
200 S.W. 35th Street
Corvallis, OR 97333
541-754-4426
541-754-4716(FAX)
davep@mail.cor.epa.gov

Information Management, EMAP-Surface Waters
Marlys Cappaert
OAO c/o U.S. Environmental Protection Agency
NHEERL Western Ecology Division
200 S.W. 35th Street
Corvallis, OR 97333
541-754-4467
541-754-4716(FAX)
cappaert@mail.cor.epa.gov